



## Healthy Fruit, Vol. 28, No. 19, August 18, 2020

Prepared by the University of Massachusetts Amherst Extension Fruit Team

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### Upcoming pest events

Adapted from [Scaffolds Fruit Journal](#)

<b>Coming events</b>	<b>Degree days (Base 43 BE)</b>
Apple maggot flight subsides	2772-3258
Codling moth 2nd flight subsides	2846-3462
Lesser appleworm 2nd flight subsides	2794-3488
Obliquebanded leafroller 2nd flight peak	2588-3007
Oriental fruit moth 3rd flight peak	2650-3200
Peachtree borer flight subsides	2478-3126
Redbanded leafroller 3rd flight peak	2704-3174
San Jose scale 2nd flight subsides	2673-3419
Spotted tentiform leafminer 3rd flight peak	2545-2982
White apple leafhopper 2nd brood 1st hatch	2770-3098

Note: as of 17-August at the UMass Orchard in Belchertown, MA we are at **2,980** DD's Base 43 BE from January 1.

## **Announcements and Upcoming meetings**

**Apple harvest open office hour.** Tuesdays at noon through harvest (or when I call it quits or no one shows up). Apple maturity update, PYO logistics, open discussion. Via Zoom, <https://umass-amherst.zoom.us/j/7562823263>, Meeting ID: 756 282 3263 One tap mobile +16468769923,,7562823263# US (New York)

**Apple crop insurance listening session.** For Region 2 (CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT) Producers, Tuesday September 1, 2020. Zoom information: <https://us02web.zoom.us/j/87372872344?pwd=ZEZza2RBS3M0Zm9VeloxSXZXUHczdz09>

Passcode: local

Meeting ID: 873 7287 2344

Telephone participants: You can mute and unmute yourself by typing “\*6”

One tap mobile: +16465588656,,87372872344#,,,,,0#,,746512# US (New York)

Please contact Andre Williamson, President of Agralytica, with any questions regarding the content of this invitation or to provide additional feedback regarding the feasibility of insurance coverage for local food producers. Mobile Number: 240-432-0308 OR email: [awilliamson@agralytica.com](mailto:awilliamson@agralytica.com). If you email, please include “Local foods insurance” as your subject line. We will accept comments by phone or email until September 10. RMA will use the information collected by Agralytica to help determine ways to better insure growers supplying local markets. Please join one of these sessions so that your feedback can be heard.

## **The way I see it...**

Jon Clements

Dry. Kind of hot (but looking less hot). Maples are showing tinges of color as well as apples. Big question is harvest timing? Ahead, “normal,” behind? Still too early to tell IMHO but I suspect we are on track for average timing. Can't wait to get this crop off the trees, watch for early maturity on lighter cropped trees. As a reminder, back in the [June 30 edition of Healthy Fruit](#), I predicted “the last day for McIntosh harvest for fruit destined for long-term CA storage at the UMass Orchard in Belchertown, per the Central New York

formula as in Predicting Harvest Date Windows for Apples is Thursday, September 24, 2020.” Assuming Mac harvest will start the week of September 6, if we go back 3-4 weeks from then, which is the optimum timing for ReTain application for Macs, that puts us smack-dab in the middle of this week. The weather is ideal for early morning application of ReTain before the wind comes up mid-morning. No rain predicted. Don’t forget the organosilicone surfactant at 6 to 12 oz. per 100 gallons. Avoid proximity to calcium chloride application. Early morning timing is best for ReTain, and good coverage is essential. For more information on using ReTain on various varieties see Duane Greene’s comments in the [August 4, 2020 Healthy Fruit](#). (Or you can [watch this short video](#) highlighting the important points of ReTain application to apples.) And my apple maturity report is included below under [Horticulture](#). And don’t forget you might get more if you visit during my open office hour, every Tuesday at noon: <https://umass-amherst.zoom.us/j/7562823263>

Oh, and rather than watching the Conventions, and if you are still awake in the evening, consider watching this excellent series of YouTube videos from Nova Scotia Fruit Growers’ Association featuring their Virtual Summer Orchard Tour: [https://www.youtube.com/channel/UCMhQIJLPmCav\\_AI6cFZxp7Q](https://www.youtube.com/channel/UCMhQIJLPmCav_AI6cFZxp7Q)

## Insects

Jaime Piñero

### Weekly report of insect pest captures in monitoring traps at CSO (Belchertown, MA)

[Period: 8.11 - 8.17](#)

Insect	Average captures/trap	Notes
Redbanded leafroller	0	Pheromone-baited trap
Oriental fruit moth	2	Pheromone-baited trap
Codling Moth	0	Pheromone-baited trap
Spotted tentiform leafminer	32	Pheromone-baited trap

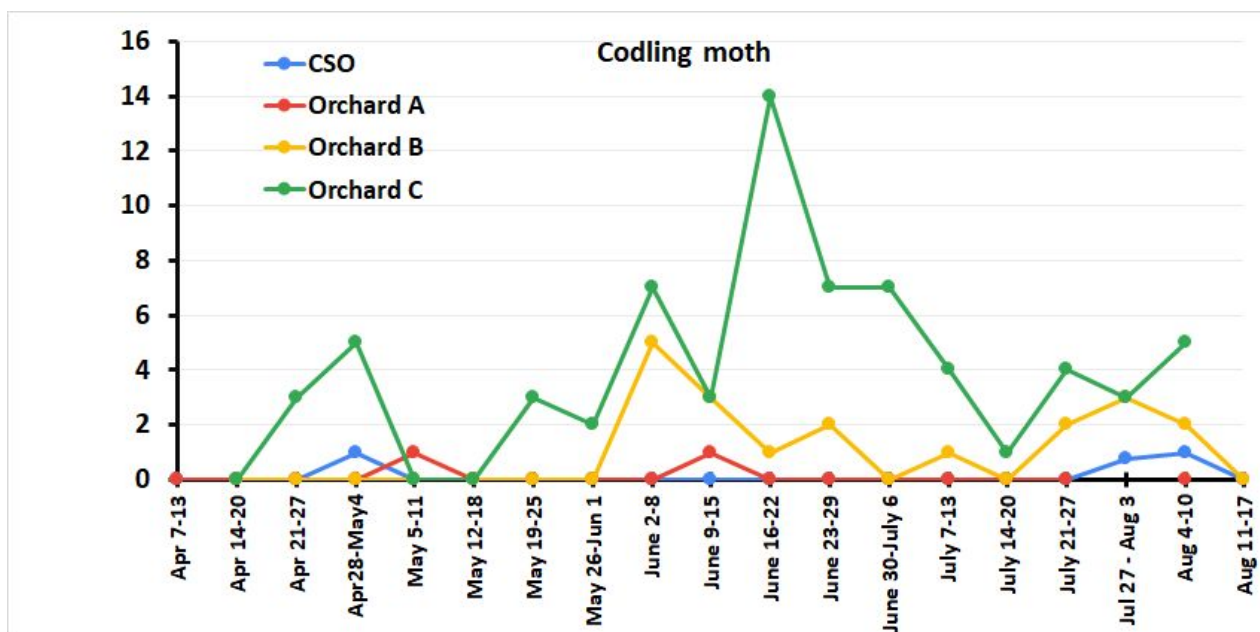
Obliquebanded leafroller	0	Pheromone-baited trap
Spotted Wing Drosophila	149.6 (5 Aug.) 122.5 (12 Aug.)	Males and females combined. Diluted Concord grape juice-baited trap
Apple Maggot Fly	1.25	Unbaited sticky-coated red spheres
BMSB	6 (12 Jul.) 14 (17 Aug.)	Clear sticky cards baited with BMSB pheromone

### **Pest Alert! Spotted Lanterffly now in NY and NJ.**

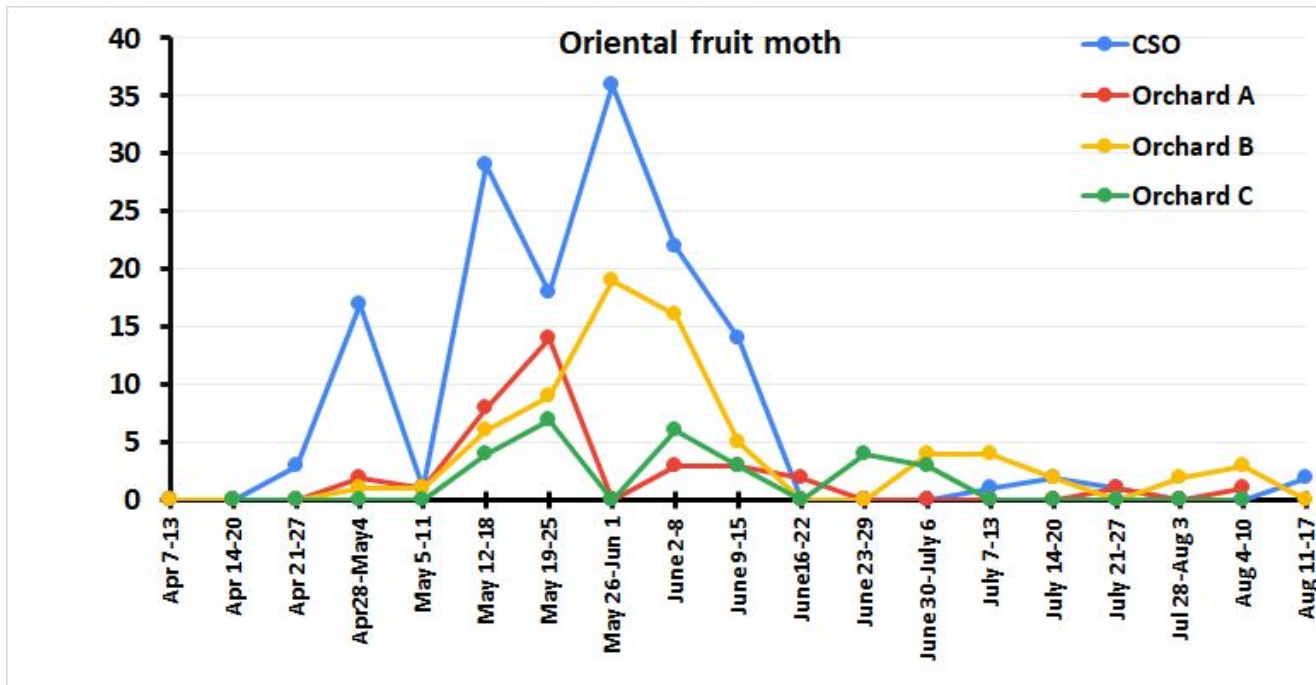
Now, as of August 14, 2020 has confirmed a living population of spotted lanternfly on Staten Island. Likewise, the New Jersey Department of Agriculture (NJDA) and Rutgers Cooperative Extension (RCE) offices all across the state have been receiving reports of sightings of spotted lanternfly. Keep an eye on this pest. Sightings can be reported [here](#).

**Apple maggot fly.** Captures in unbaited sticky spheres in one unsprayed section of the UMass Cold Spring Orchard have decreased for the last 7 days (average of 1.25/trap on 8.17; average of 3.8 per trap on 8.10).

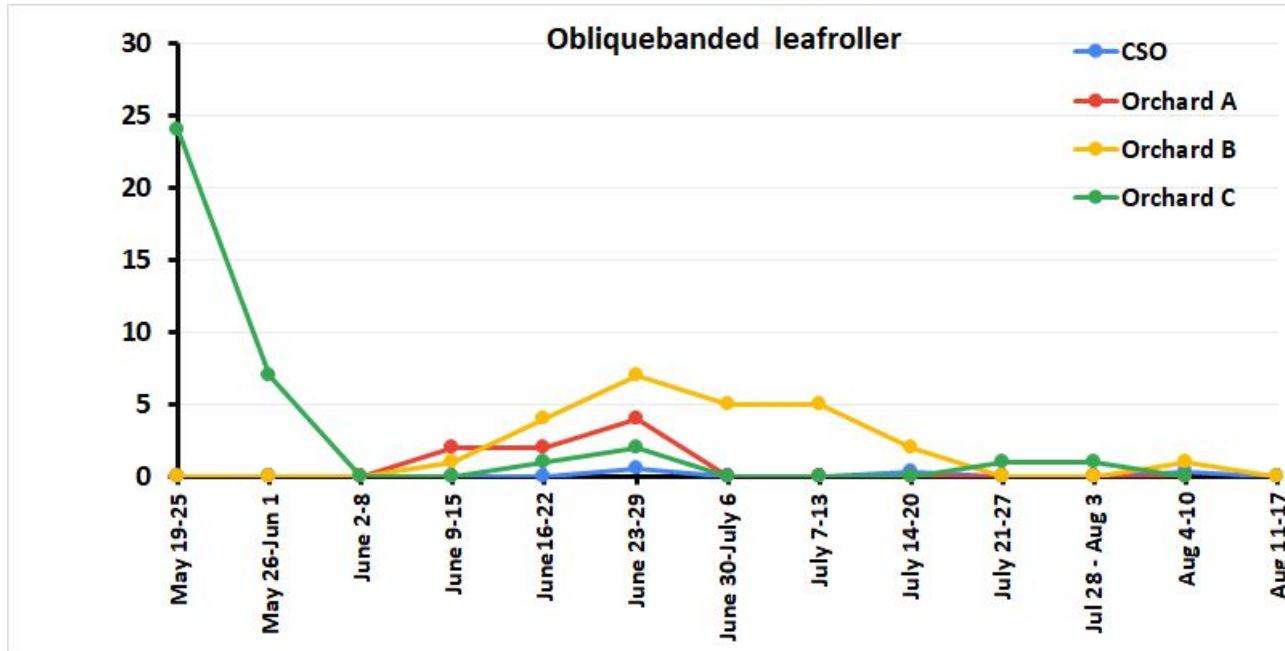
**Codling moth.** The 2nd generation flight is over - at least in three of the four monitored orchards. Orchard C continues to have some CM activity.



**Oriental fruit moth.** Captures of OMF continued to be very low in most monitored orchards.

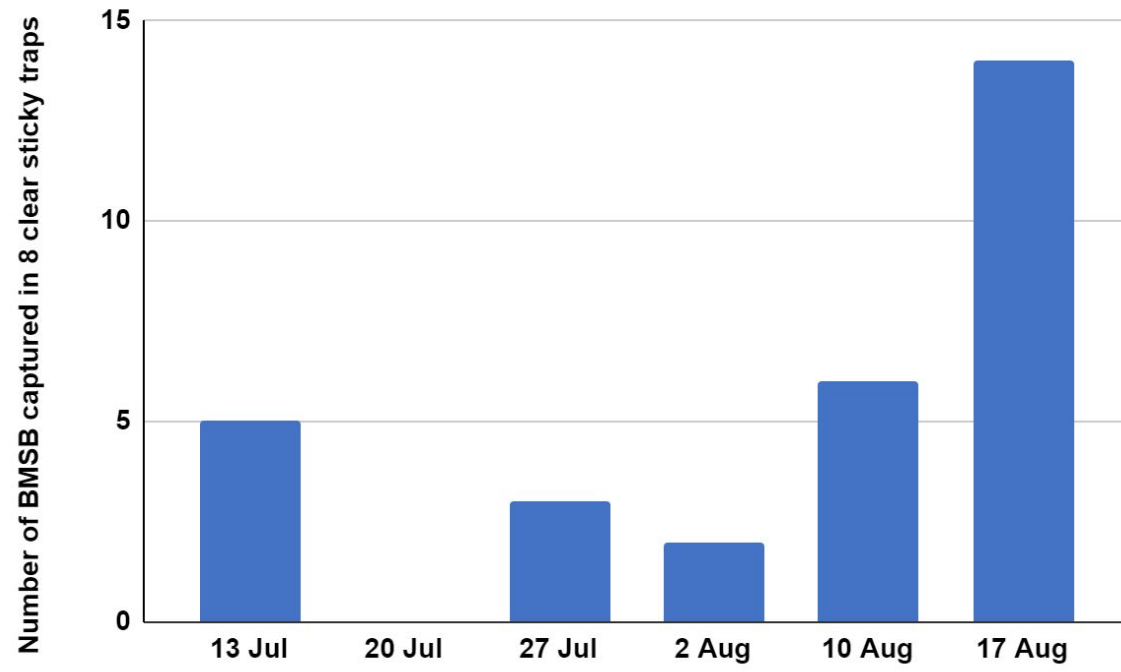


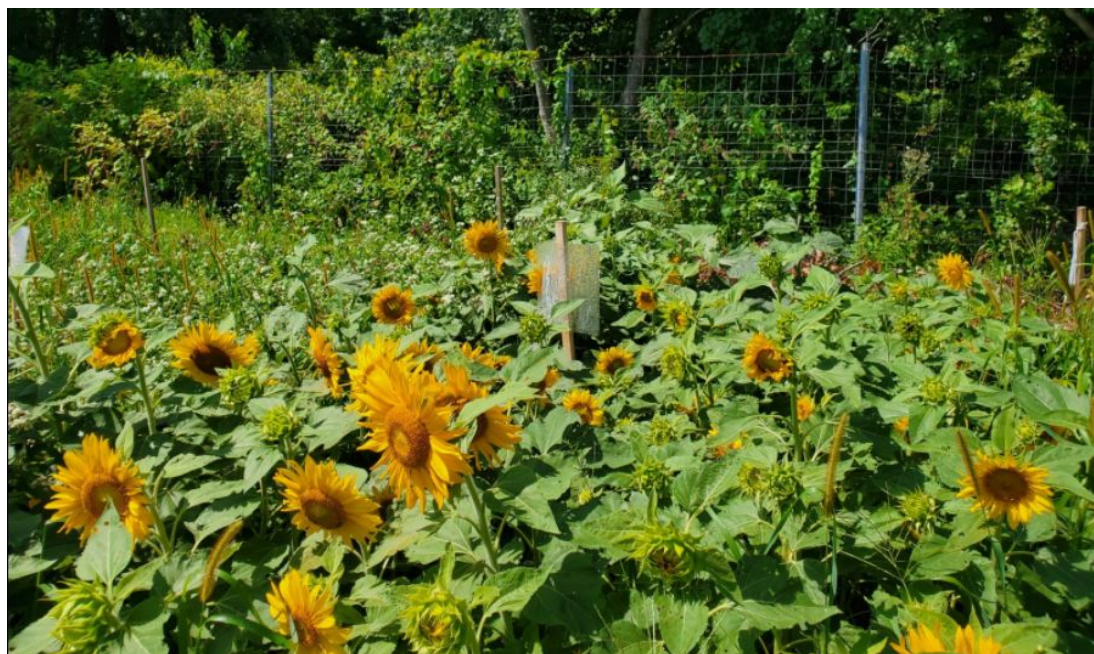
**Obliquebanded leafrollers.** The adult flight of the second generation is expected to happen soon; yet populations may be comparatively low in the four monitored orchards.



**Brown Marmorated Stink Bug.** At the UMass Cold Spring Orchard, captures of BMSB adults in pheromone-baited clear sticky traps are on the rise. The chart below shows the temporal pattern of BMSB captures in the trap crop area (depicted below the chart).







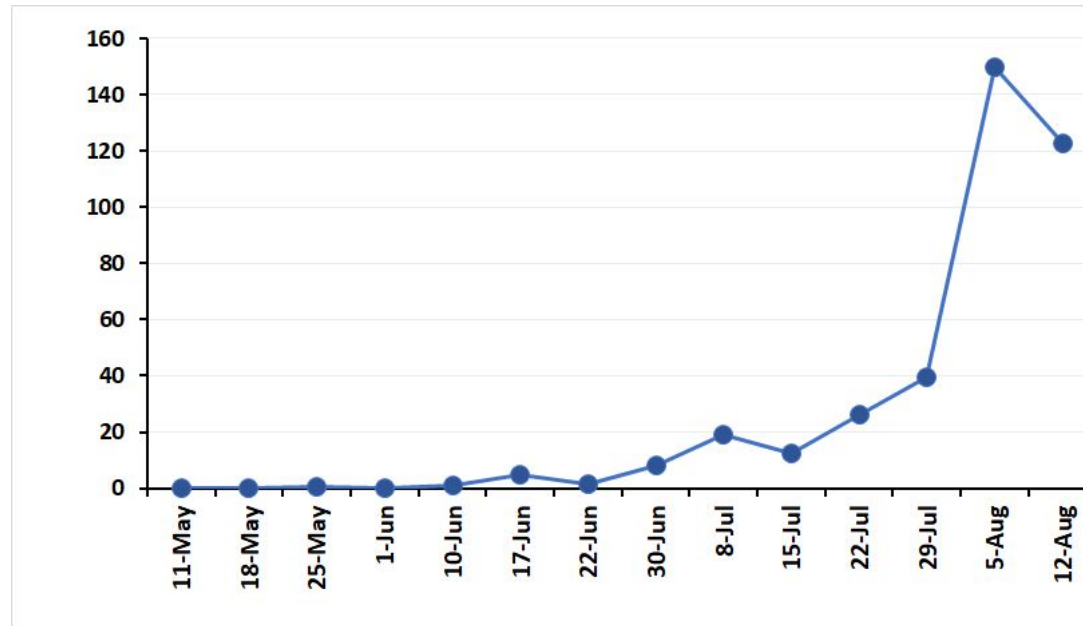
**VIDEO SHOWING HOW TO DEPLOY A GHOST TRAP:**

**CLICK [HERE](#)**

## How to install Ghost Trap?



**Spotted wing Drosophila.** With the high SWD populations recorded for the last 2 weeks, there continues to be a high risk of fruit infestation by SWD throughout the state. It is essential to maintain fruit protection on ripe or ripening susceptible fruit. Maintain coverage with effective insecticides, re-apply after rain, alternate among insecticides with different modes of action to reduce the risk of creating insecticide-resistant SWD populations and do not stretch your spray intervals too far.



## Diseases



Liz and Dan are on annual leave this week, thus no Diseases this week. Don't worry, be happy, it's dry out there, not particularly conducive to disease development. JC




## Horticulture

Apple maturity report

J. Clements

All observations from UMass Orchard, Belchertown, MA unless otherwise noted. Target maturity numbers: red color, >50%; firmness, >14 lbs.; soluble solids, >12; DA, 0.60 to 0.40 for Honeycrisp, 0.65 for Gala, 1.00 for Golden Delicious, 1.15 to 1.00 for Red Delicious (higher DA = more "green"); starch index, 4-6.

2020 Date	Variety	Drop	Diameter (inches)	Color (% red)	Firmness (lbs.)	Brix	Starch Index	DA Meter	Comments	Picture
8/17	MN 55	some	3.2	80	16	10.6	4	0.80	Starting to drop, uneven maturity, variable crop load by tree, needs ReTain, aka 'Rave,' or 'First Kiss'	
8/17	Paulared	few	3.1	65	16	12.1	3-4	NA	Variable crop load, clustered, not great, some watercore, economically ripe	

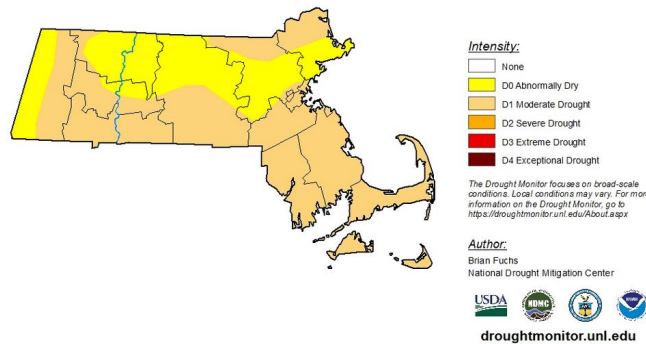
8/17	Ginger Gold	none	3.1	NA	21	11.3	NA	1.02	Does not starch test, needs another week	
8/17	Sansa	nil	3.1	25-50	18	13.9	3-4	0.58	Some water core, very susceptible to cork spot, start to spot-pick by color	
8/17	Zestar!	nil	3.2	25-50	17	12.5	3-4	0.84	Should wait another week to pick	

# Small Fruit Update

[Sonia Schloemann](#)

U.S. Drought Monitor  
Massachusetts

August 11, 2020  
(Released Thursday, Aug. 13, 2020)  
Valid 8 a.m. EDT



## CROP & WEATHER CONDITIONS

**Weather:** Dry soil conditions persist as approximately  $\frac{2}{3}$  of the state remains in a **Moderate Drought** condition and the remainder is **Abnormally Dry**. Irrigation is very important in all berry fields to sustain healthy plants through the remainder of the growing season and into the Fall. Pay particular attention to renovated strawberry fields as they regrow and new fields that are setting runners. Also, remember that blueberry bushes are very shallowly rooted which makes them especially vulnerable to drought injury. Irrigation ponds are running low so prioritizing the irrigation schedule may be difficult. Other soil moisture conservation strategies may be needed.

**Spotted Wing Drosophila (SWD):** Trap captures in MA and surrounding states are escalating. Quoting Dr. Piñero's words from the Insect section of this HF, "*With the high SWD populations recorded for the last 2 weeks, there continues to be a high risk of fruit infestation by SWD throughout the state. It is*

*essential to maintain fruit protection on ripe or ripening susceptible fruit. Maintain coverage with effective insecticides, re-apply after rain, alternate among insecticides with different modes of action to reduce the risk of creating insecticide-resistant SWD populations and do not stretch your spray intervals too far.*" See [this link](#) for more information on this pest and a chart for [recommended spray materials](#).

**Brown Marmorated Stink Bug (BMSB):** Trap captures of this pest are on the rise. This pest can be found feeding on berry crops as well as tree fruit crops. [Traps](#) are the best way to confirm the presence of this pest. See the [New England Small Fruit Management Guide](#) for recommended materials and rates for control.

**Spotted Lantern Fly (SLF):** This invasive pest has been confirmed in NY and NJ. See note in Insect section above. Grape growers should pay special attention to the progress of this pest toward our region.

**Strawberries:** June-bearing varieties are growing well after renovation. Be sure to keep fields irrigated during hot and dry periods to keep plants healthy and avoid stress during this regrowth period. At least an inch of water every 5 days is what is recommended. Newly planted fields are becoming established and setting runners to fill in the rows. Runners should be swept into the central row to

avoid spreading to a too-wide matted row. Late-Summer early-Fall is a good time for fertilizing June-bearing strawberries. Day Neutral harvest is underway. [SWD](#) and [Tarnished Plant Bug](#) are the main concerns at this time and will require frequent control measures. Weed management is also key during this time. See earlier [IPM Berry Blasts](#) and the [New England Small Fruit Management Guide](#) for more on specific weed management recommendations.

**Brambles:** Spent floricanes in summer fruiting varieties should be removed now. This helps improve air circulation in the canopy and reduces favorable conditions for cane blights and other diseases. It also improves sunlight penetration into the canopy resulting in more flower bud initiation on primocanes for next year's crop. Remember to tip long blackberry and black raspberry primocanes to stimulate branching. Primocane harvest is beginning and [SWD](#) is the main issue from here on out. See SWD Update above for more info on recommended management practices. Some have reported finding BMSB in Fall Raspberries. Trapping is recommended for identifying this pest. [Botrytis fruit rot](#) can be an increasing problem as the season goes on due to shortening day length and longer wetting periods (including dew) on fruit. Keep plants well irrigated (via drip rather than overhead), through the late summer fruiting period.



**Blueberries:** Harvest is winding down. Keep bushes irrigated through the hot dry periods as blueberries are very susceptible to drought stress (see photo left). At least 1" of water is needed every 5 days. An occasional pest that can defoliate blueberry bushes is the [yellow-necked caterpillar](#) or one of the other *Datana* moth species. These caterpillars can quickly defoliate a bush or limb of a large bush. The best remedy is to gather the caterpillars (wear gloves), and destroy them. This is easier than spraying because they cluster in large masses on the bushes.

See the [New England Small Fruit Management Guide](#) for recommended materials and rates for any insect or disease mentioned above.



## **Hawkeye's corner (notes from the field)**

Liz Garofalo

Liz is on annual leave this week, thus no notes from the field. JC

## **Guest article**

### **Bitter pit or stink bug injury?**

By Jaime Piñero, Wes Autio, Jon Clements, and Duane Greene

This short article is based mostly on pictures that show various types of damage observed on Sansa fruit at the UMass Cold Spring Orchard in mid-August 2020. Samples of damaged fruit were taken to the laboratory. The determination of whether symptoms were caused by cork spot (or another type of physiological disorder) or by stink bugs (e.g., Brown Marmorated Stink Bug) required the use of a stereomicroscope and fruit dissections.

Due to variability in other surface and subsurface characters, and potential problems with visual appearance of injury in the field, evaluations of suspected stink bug damage should be performed with 40X magnification, to confirm the presence of stink bug feeding punctures. In addition, a transverse section of apple should show a stink bug feeding sheath (a thin casing of salivary material through which the insect probes the fruit) and corking. Below are our best diagnoses.

Of 15 damaged Sansa apples (sampled from CSO) that were inspected, one had the type of insect damage shown below. This means that the majority of the damage observed was likely due **cork spot**.

### Puncture caused by an insect.

*The fruit was dissected to identify the culprit*



### Suspect: Stink bug

*Stink bug feeding sheath is observed*



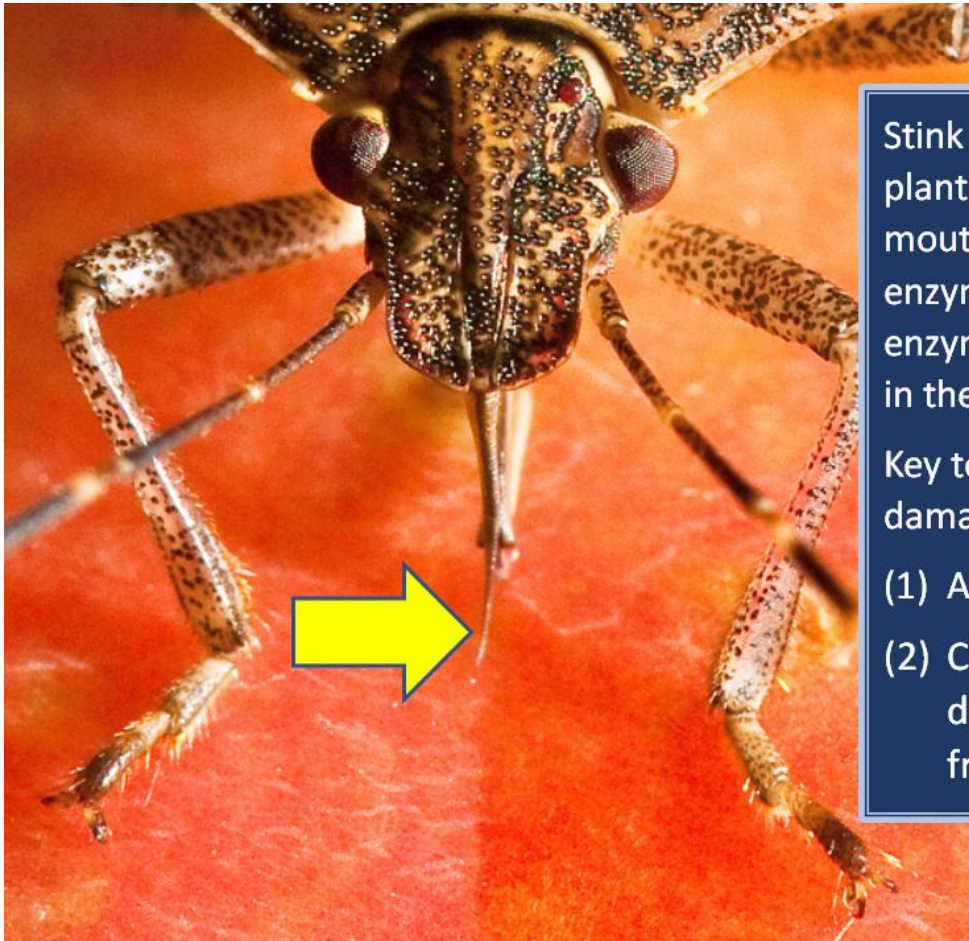
### Confirmation: Stink bug (likely: BMSB)

*Feeding sheath and lack of AMF egg*



**STINK BUG INJURY:** As they feed, stink bugs secrete saliva that is toxic to plant tissue. The saliva forms a protein tube (sheath) around the feeding structure at the feeding site. The sheath forms the seal for the stink bug to ingest the partially digested tissues. Once secreted it rapidly hardens and remains on the plant after the insect is done feeding.

**The presence of the feeding sheath (circled in red) is key to confirm that fruit injury is caused by stink bugs.**



Stink bugs feed by sucking sap from plants via piercing-sucking mouthparts and simultaneously inject enzyme-containing saliva (digestive enzymes) into the feeding site to aid in the breakdown of plant tissues.

Key to the identification of stink bug damage is the presence of:

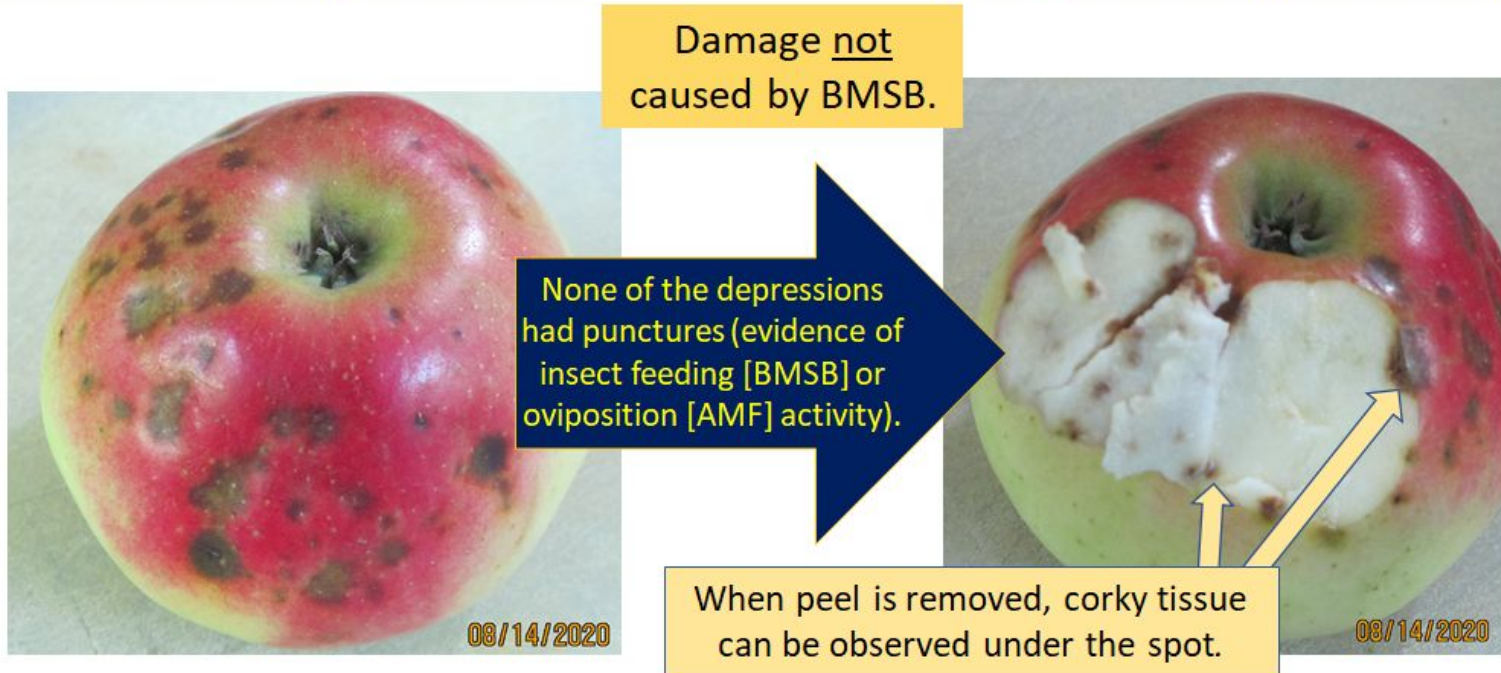
- (1) A puncture
- (2) Corking, ranging from yellow to dark brown, beneath the skin of fruit

**Stink bug injury:** Note the puncture. Upon dissection, no AMF egg was found. While stink bug feeding sheath was not so evident, damage is attributable to BMSB.





## Sansa fruit sampled from the UMass Cold Spring Orchard (8.14.2020)



**Cork spot and bitter pit** are physiological disorders. These disorders are similar in that damage to tissue occurs mostly on the surface and tissue just below the surface. The occurrence of cork spot and bitter pit are related to reduced calcium availability.

Cork spot generally appears in the outer portion of the fruit flesh as small green dimples or depressions. This disorder may begin developing in June and continue throughout the initial stages of growth and enlargement. The green spots eventually enlarge to corky, discolored areas  $\frac{1}{4}$  to  $\frac{1}{2}$  inch into the flesh of the apple.

**The corky spots may occur anywhere on the fruit flesh.**

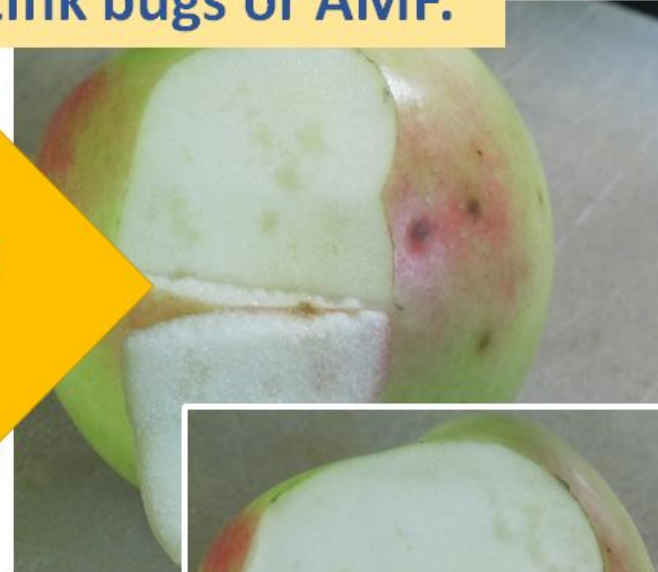


**A puzzle: symptoms shown are not typical  
of bitter pit or cork spot.**

**Injury was not caused by stink bugs or AMF.**



**None of the  
depressions had  
insect-caused  
punctures.**





**Damage to Sansa  
fruit attributable to  
cork spot.**

- Fruit collected from CSO.
- Sunken pits have no insect punctures.
- Removal of the skin revealed corky brown tissue.



## Facebook Me

No Facebook Me this week...

## Useful links

UMass Fruit Advisor: <http://umassfruit.com>

[UMass Extension Fruit Team YouTube Channel](#)

[UMass IPM Fruit Loop Podcast](#)

Scaffolds Fruit Journal: <http://www.nysaes.cornell.edu/ent/scaffolds/>

Network for Environment and Weather Applications (NEWA): <http://newa.cornell.edu>

Follow me on Twitter (<http://twitter.com/jmccextman>) and Facebook (<http://www.facebook.com/jmccextman>)

[Acimovic Lab at Hudson Valley](#)

[Peter Jentsch's Blog](#)

The next Healthy Fruit will be published on or about September 1, 2020. In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

Thank you sponsors...



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